

PRENTICE COMPUTER CENTRE

UNIVERSITY OF QUEENSLAND, ST. LUCIA, QUEENSLAND, AUSTRALIA. 4067.



NEWSLETTER

N-262

27-April-81

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1.0 VAX 11/780 SYSTEM

This statement has been prepared jointly by Dr Larry Reeker, Head of the Department of Computer Science and a member of the Prentice Computer Centre Management Committee and Mr Alan Coulter, Director, Prentice Computer Centre.

The proposal to purchase the VAX 11/780 was considered by the Prentice Computer Centre Management Committee at its meeting of 30-7-80 and was approved by that Committee for inclusion in the recommendations for Central Computing Equipment allocations for 1981 and referred to the Computing Policy Committee. At its meeting of 9.10.80 the Computing Policy Committee recommended the purchase of the VAX 11/780 to the Equipment and Maintenance Committee. Following deliberation by this Committee and the approval of other higher level Committees within the University, contracts were finalised by the University (represented by the Legal Officer, the Deputy Bursar and the Director, Prentice Computer Centre) with Digital Equipment Australia Ltd. The VAX 11/780 was delivered on 9-4-81 and after a period for installation and acceptance testing it should be turned over to the Computer Centre by early May.

The original time-table envisaged was for the new system to be settled in during first semester 1981 and to be fully operational by second semester 1981. The lengthy debate on the choice of operating system has necessarily delayed implementation. It can be appreciated that many aspects of tooling up are dependent upon the operating system to be used. A recommendation has now been made by the Computing Policy Committee that VMS with UNIX type of facilities provided through University of California Berkeley Software Tools System should be implemented on this VAX system. On this basis the Prentice Computer Centre is planning to make the VAX available to users for testing and familiarisation by July on an uncharged basis (at this stage some facilities such as file back-up, remote printing and high speed file transfer to the KL may not be available). Charging and full implementation of all facilities will follow as quickly as possible.

The VAX 11/780 will be implemented as a low overhead system servicing teaching and research work for the University of Queensland and Griffith University (LOADS system). Senate has approved that in the first year of operation the charges will be 75% of equivalent job costs on the KL. It is hoped that once experience has been gained with the nature and costs of operation further reductions will be possible in the future. It should be noted that use of primary memory (MOS) will not enter into the charge calculation. This together with low priority charges outside of prime shift should assist those with large jobs.

Something more should be said about the debate on VMS and UNIX. Both of the writers have no disagreement on the fact that UNIX is a most significant development in the evolution of operating systems. UNIX is a simple but elegant operating system with consistency

throughout and it is therefore a very good candidate for transportability from one type of equipment to another.

It is not a difficult system to learn and is enthusiastically supported by those who are using it as are giving high user productivity. UNIX cannot be entirely divorced from machine architectures as there is a need to write special device drivers, hardware error logging, on line diagnostics, memory handling programs etc. The fact that 95% of UNIX is written in a higher level language would assist significantly in the effort required for such development work. It is natural, however, that the Director of the Prentice Computer Centre would put high weight on the immediate problems of implementation of the new system to provide computing power as quickly as possible, on the problems of training Centre Staff and users and have regard to the current position that Fortran under UNIX is about half the speed under VMS, that there is no batch stream software or support for hardware maintenance. What has been done is to obtain a system called Software Tools which was developed by the University of California Berkeley to provide UNIX facilities under the VAX operating system (but obviously not as efficiently as a pure UNIX system). This will give all users the chance to experience user type facilities under UNIX. Additionally, the Centre has applied for a UNIX licence so that Centre staff in the non user period will have the opportunity to study and evaluate UNIX. This sort of evolutionary development we see as a pre-requisite for the planning of computing equipment strategies in the 1982-84 triennium. Indeed the Computing Policy Committee in its resolution recommending that the VMS system be adopted placed particular emphasis on the need to consider manufacturer independent operating systems and communications software in planning future additions to central and departmental equipment.

The Computer Science Department is, meanwhile, exploring options to provide the benefits of UNIX to advanced students so that they may gain a feel for the usefulness of this type of system in software engineering.

Larry Reeker, Head Department Computer Science
Alan Coulter, Director Prentice Computer Centre

2.0 OPERATING RESULTS 1980

The costs of operations in 1980 of \$1,229,000 were covered by revenue of \$1,170,000 and a contribution toward salary supplementation of \$59,000.

The revenue increases were due to growth in demand. As compared with the previous year computer usage was higher by 32%, contract programming by 45%, and maintenance of departmental computing equipment by 52%. Fifty percent of the total costs of Operations of the Computer Centre were covered by funds from other than the General Recurrent Fund.

The increase in usage of the central computing facility in 1980 was distributed as follows:-

University of Queensland	
Teaching and Research .	58%
Administration	21%
Affiliated	12%
Griffith University	6%
Other Approved Users	3%
	<u>100</u>

Jobs on the KA system increased by 9% (30% increase in terminal work) and on the KL system by 58% (50% increase in terminal work).

The proportions of usage by various user categories were as follows:

	1980	
	USAGE	JOBS
	%	%
UNIVERSITY OF QUEENSLAND		
Teaching & Research Departments	41	66
Administration	34	7
Affiliated Groups	10	8
GRIFFITH UNIVERSITY		
Schools	4	10
Administration	4	2
OTHER APPROVED USERS	7	7
	<u>100</u>	<u>100</u>

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(Note - Usage refers to central computing only and does not include computers established in the departments of the University)

Support for departmental computing equipment has increased significantly. In 1980, 144 orders were placed on behalf of departments for computing equipment involving an expenditure of \$568,756.

Emphasis has been given to training courses for University staff and post graduate students. Thirty-five courses and sixteen seminars attended by a total of 858 people were conducted during 1980.

Director
extension 2189

3.0 NEW TTY TYPES

Two terminals have been added to the list of types which may be specified in the SET TTY TYPE xxx command. They are the Visual 200 (VS200) and the ADM-3A (ADM3A). Setting these types results in a tidier treatment of RUBOUT, Control-W (and in the case of the Visual 200 of Control-U) than on hard-copy terminals.

For information on system defaults which apply to these and other terminal types type HELP TTYTYP.

Allan Woodland
extension 3944

4.0 LIBRARY NEWS

A new version of IMSL has been placed on NEW:. It reflects 41 new routines and four deleted routines. The deleted routines are:

GGAMS - replaced by GGAMR
GGAMT - " " GGAMR
GGBIR - " " GGBM
GGMLT - " " GGMTN

More information can be obtained by contacting Leonie Roberts.

Leonie Roberts
extension 3943

5.0 INFORMATION CONCERNING COURSES

1. General Notes

1. Users not familiar with the PDP-10 System must attend an Introductory Course before enrolling in other courses.
2. An outline of the content of each course is contained in Newsletter N-260.
3. Staff and post-graduate students are admitted free; other users are charged on the rate of \$10.00 per half-day session.
4. All courses are conducted in the Client Room, Hawken Building.
5. Enrolments may be made by contacting Barry Maher, ext. 3139 (preferably between 12.00 - 2.00 pm).

2. Courses for May-July

1. VG Course	: May 5 - May 7 3 full days 9.00-12.00 + 2.00-5.00 each day
2. Introductory Fortran Programming Course	: May 11 - May 15 5 full days 9.00-12.00 + 2.00-5.00 each day
3. RUNOFF Course	: May 20 - May 22 3 full days 9.00-12.00 + 2.00-5.00 each day
4. SPSS Course	: May 25 - May 29 5 half days 9.00-12.30 each day
5. Fortran Debugging Course	: May 26 - May 27 2 half days 2.00-5.00 each day

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- 6. Plotting Course : June 1 - June 5
4 half days 2.00-5.00 each day
- 7. Introductory Course : June 9 - June 10
2 full days 9.00-12.00 + 2.00-5.00
each day
- 8. Introductory Course : June 11 - June 12
2 full days 9.00-12.00 + 2.00-5.00
each day
- 9. SPSS Course : June 15 - June 17
3 full days 9.00-12.00 + 2.00-5.00
each day
- 10. Introductory BASIC
Programming Course : June 23 - June 25
3 full days 9.00-12.00 + 2.00-5.00
each day
- 11. 1022 Course : June 29 - July 3
5 half days 2.00-5.00 each day

Barry Maher
extension 3139

6.0 TELEPHONE EXTENSIONS

The User Services (non-charged) Section comprising Mark Johnson, Barry Maher and Noela Meier have moved to new quarters on the Ground Floor of the Hawken Building.

Unfortunately, telephone connections have been delayed and the only extension available is 3139. Any queries about courses, preliminary advice and assistance etc. should therefore be directed to this extension.

Tony Bird
extension 3139

S Y S T E M P E R F O R M A N C E R E P O R T

For node KA10 there were 30 working days in the period 1/Mar/81 to 31/Mar/81

	< KA10 >	
	HHH:MM	%
1. Attended system running time	496:43	
2. Plus unattended system running time	214:14	
3. Equals total system running time	710:57	100.0
less time used for:		
4. Scheduled maintenance	20:05	2.8
5. Dedicated operations tasks	2:31	0.4
6. Dedicated systems development	0:00	0.0
7. Equals time scheduled for use	688:21	96.8
less lost time due to:		
8. Unscheduled maintenance	1:29	0.2
9. Hardware faults	0:34	0.1
10. Software faults	0:00	0.0
11. Unresolved	0:05	0.0
12. Environmental conditions	0:00	0.0
13. Equals time available to users	686:13	96.5
14. Effective user uptime (13./7.)		99.7
15. Number of crashes		3
16. Mean availability between crashes	228:44	
17. Mean time to recover crashes (minutes)		13
18. Total number of Jobs		13643

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S Y S T E M P E R F O R M A N C E R E P O R T

For node KL10 there were 27 working days in the period 1/Mar/81 to 31/Mar/81

		<	KL10	>	<	DN87A	>	<	DN87B	>
			HHH:MM	%		HHH:MM	%		HHH:MM	%
	1. Attended system running time		500:27			500:27			500:27	
	2. Plus unattended system running time		124:46			124:45			124:45	
	3. Equals total system running time		625:13	100.0		625:13	100.0		625:13	100.0
	less time used for:									
	4. Scheduled maintenance		20:21	3.3		20:21	3.3		20:21	3.3
	5. Dedicated operations tasks		7:53	1.3		7:53	1.3		7:53	1.3
	6. Dedicated systems development		0:00	0.0		0:00	0.0		0:07	0.0
	7. Equals time scheduled for use		596:59	95.5		596:59	95.5		596:52	95.5
	less lost time due to:									
8	8. Unscheduled maintenance		2:50	0.5		0:00	0.0		0:00	0.0
	9. Hardware faults		1:24	0.2		0:01	0.0		0:00	0.0
	10. Software faults		0:07	0.0		0:00	0.0		0:02	0.0
	11. Unresolved		0:03	0.0		2:15	0.4		1:42	0.3
	12. Environmental conditions		0:00	0.0		0:00	0.0		0:00	0.0
	13. Equals time available to users		592:35	94.8		594:43	95.1		595:03	95.2
	14. Effective user uptime (13./7.)			99.3			99.5		99.7	
	15. Number of crashes			4			4		17	
	16. Mean availability between crashes			148:09			148:41		35:00	
	17. Mean time to recover crashes (minutes)			24			34		5	
	18. Total number of Jobs			17420						

S Y S T E M P E R F O R M A N C E R E P O R T

For node GRIFFITH there were 27 working days in the period 1/Mar/81 to 31/Mar/81

	< GRIFFITH >	
	HHH:MM	%
1. Attended system running time	176:04	
2. Plus unattended system running time	414:48	
3. Equals total system running time	590:52	100.0
less time used for:		
4. Scheduled maintenance	0:00	0.0
5. Dedicated operations tasks	0:00	0.0
6. Dedicated systems development	0:00	0.0
7. Equals time scheduled for use	590:52	100.0
less lost time due to:		
8. Unscheduled maintenance	0:00	0.0
9. Hardware faults	1:08	0.2
10. Software faults	0:00	0.0
11. Unresolved	1:24	0.2
12. Environmental conditions	0:00	0.0
13. Equals time available to users	588:20	99.6
14. Effective user uptime (13./7.)		99.6
15. Number of crashes		23
16. Mean availability between crashes		25:35
17. Mean time to recover crashes (minutes)		7

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For node COMMERCE there were 22 working days in the period 1/Mar/81 to 31/Mar/81

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< COMMERCE >			
	HHH:MM	%	
1. Attended system running time	177:11		
2. Plus unattended system running time	0:00		
3. Equals total system running time	177:11	100.0	
less time used for:			
4. Scheduled maintenance	0:00	0.0	
5. Dedicated operations tasks	0:00	0.0	
6. Dedicated systems development	0:00	0.0	
7. Equals time scheduled for use	177:11	100.0	
less lost time due to:			
8. Unscheduled maintenance	0:00	0.0	
9. Hardware faults	0:40	0.4	
10. Software faults	0:00	0.0	
11. Unresolved	1:39	0.9	
* 12. Environmental conditions	8:00	4.5	
13. Equals time available to users	166:52	94.2	
14. Effective user uptime (13./7.)		94.2	
15. Number of crashes		3	
16. Mean availability between crashes		55:37	
17. Mean time to recover crashes (minutes)		46	

* The environmental problem was caused by an air conditioning fault. This could not be corrected immediately due to a lack of spare parts.